#arcs2015

Book as Platform: Linking Data to Build a Better Book

Jason A. Clark  
@jaclark

Scott Young  
@hei_scott
The Swabian

He was slow in learning how to talk. "My parents were so worried," he later recalled, "that they consulted a doctor." Even after he had begun using words, sometime after the age of 2, he developed a quirk that prompted the family maid to dub him "der Depperte," the dopey one, and others in his family to label him as "almost backwards." Whenever he had something to say, he would try it out on himself, whispering it softly until it sounded good enough to pronounce aloud. Every sentence he uttered," his worshipful younger sister recalled, "no matter how routine, he repeated to himself softly, moving his lips." It was all very worrying, she said. "He had such difficulty with language that those around him feared he would never learn."  

His slow development was combined with a cheeky rebelliousness toward authority, which led...
Every Book its [machine] Reader

Apologies to Ranganathan
What if?

Books were machine indexed for semantic discovery

Journal articles were semantically tagged at the page level
A “Book” in a Browser

Atomizable, Analyzable, Linkable, Reusable
Book as Software

1. Software Development
2. Data Storage and Archiving
3. Metadata
4. Discovery and Analytics
5. API Access
Links and Anchors

A link is the connection between one piece of hypertext and another.

```
1 <title>Hypertext Links</title>
2 <h1>Links and Anchors</h1>
3 A link is the connection between one piece of
4 <a href="WhatIs.html">hypertext</a> and another.
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The Research

Institute of Museum and Library Services
Sparks Ignition Grant
Book 1

demo: arc.lib.montana.edu/book/home-cooking-history-409
code: github.com/jasonclark/bib-template

Book 2

demo: arc.lib.montana.edu/book/opsis
code: github.com/msulibrary/bib-template-fiction
Our Initial Project

Digital Book for History Class

MS Word -> Static HTML -> Dynamic HTML

API driven and Linked Data
# Gingerbread

## Ingredients:
- 1/2 c. soft shortening
- 2 1/4 c. flour
- 2 T. sugar
- 1 tsp. soda
- 1 egg
- 1/2 tsp. salt
- 1 c. dark New Orleans Molasses
- 1 tsp. ginger
- 1 c. boiling water
- 1 tsp. cinnamon

## Directions:
- Mix shortening, sugar and egg.
- Blend in molasses and cup of
boiling water, cooled first.
- Add flour, soda, salt, ginger and cinnamon.
- Beat until smooth.
- Pour into well-greased 9 inch
square pan.
- Bake 45 minutes to 50 minutes at
350 degrees.

Serve with whipped cream and
apple sauce.

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## Tradition and Travel

by Jonathan Bergh

Every winter the Bergh family celebrates the season with a special tradition. It is the time of the year when the Bergh family

young Lyle Bergh gin
was the catalyst for
countless foodstuff
outside of the farm:
Lyle Bergh took his fi
gingerbread cake he
something special. To
family gingerbread
represented a season.
Lyle it represented a
more.

In 1960s norther
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makes like steak, pot
and coffee. Lyle went
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his family would go $8
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When the Bergh fi
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would be reunited, at
there would be treati
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young Lyle Bergh gingerbread was the catalyst for exposure to countless foodstuffs that were outside of the farm menu. Once Lyle Bergh took his first bite into gingerbread cake he knew he ate something special. To the Bergh family gingerbread may have represented a season, but for Lyle it represented so much more.

In 1960s northeastern Montana's food options were limited. For inhabitants of Plentywood, Montana, like Lyle and his family, it meant that you would eat farm food: simple meals like steak, potatoes, milk and coffee. Lyle would come home and have farm food that his mother Bee cooked. When he and his family would go to Seattle, Washington, it would represent more than just family gatherings.

When the Bergh family headed to Seattle, Washington in the winter, it meant that a family would be reunited, and it meant there would be treats. For Lyle, going to Seattle meant that he would have a break from farm food and farm work. It meant that he would get to see his grandma Bee. Seattle, Washington is the place that the tradition of gingerbread cake started in the Bergh family. Grandma Bee was in the restaurant business so Lyle knew that he and his family would be eating well-prepared food. It was on these trips that Lyle got his first taste of gingerbread cake. This cake was soft and moist and topped with whipped cream that tingled his taste buds. This sugarless cake also represented that here in Seattle he and the family would have foodstuffs that were not accessible in Montana.

Lyle knew that whenever the family traveled Seattle that he would be exposed to new and foreign foods. Foods like avocados and seafood became some of Lyle's favorites because they reminded him of family. This is not to say that he disliked farm food, but Seattle food was a delicacy that Lyle could only get once a year. Because he loved gingerbread so much his mother Bee brought the recipe back to Montana. Gingerbread became a family tradition that has continued for generations. Bringing the recipe for gingerbread back to Montana meant bringing back memories for Lyle. It brought back memories of food being shared with him for the first time along with sharing moments with loved ones. Most importantly, it gave Lyle Bergh a tradition that he continues to this day. Whenever the first snow of winter falls you can always expect that Lyle Bergh will be making gingerbread. For Lyle baking gingerbread meant taking the little piece of Seattle and bringing it back to northeastern Montana.
Tradition and Travel

by Jonathan Bergh

Every winter the Bergh family celebrates the season with a special tradition. It is the time of the year when the Bergh family makes gingerbread cake. For a young Lyle Bergh, gingerbread was the catalyst for exposure to countless foodstuffs that were outside of the farm menu. Once Lyle Bergh took his first bite into gingerbread cake he knew he ate something special. To the Bergh family gingerbread may have represented a season, but
On the pleasant banks of the Garonne, in the province of Gascony, stood, in the year 1584, the chateau of Monsieur St. Aubert. From its windows were seen the pastoral landscapes of Guienne and Gascony stretching along the river, gay with luxuriant woods and vine, and plantations of olives. To the south, the view was bounded by the majestic Pyrenees, whose summits, veiled in clouds, or exhibiting awful forms, seen, and lost again, as the partial vapours rolled along, were sometimes barren, and gleamed through the blue tinge of air, and sometimes frowned with forests of gloomy pine, that swept downward to their base. These tremendous precipices were contrasted by the soft green of the pastures and woods that hung upon their skirts; among whose flocks, and herds, and simple cottages, the eye, after having scaled the cliffs above, delighted to repose. To the north, and to the east, the plains of Guienne and Languedoc were lost in the mist of distance; on the west, Gascony was bounded by the waters of Biscay.

M. St. Aubert loved to wander, with his wife and daughter, on the margin of the Garonne, and to listen to the music that floated on its waves. He had known life in other forms than those of pastoral simplicity, having mingled in the gay and in the busy scenes of
On the pleasant banks of the Garonne, in the province of Gascony, stood, in the year 1584, the chateau of Monsieur St. Aubert. From its windows were seen the pastoral landscapes of Guienne and Gascony stretching along the river, gay with luxuriant woods and vine, and plantations of olives. To the south, the view was bounded by the majestic Pyrenees, whose summits, veiled in clouds, or exhibiting awful forms, seen, and lost again, as the partial vapours rolled along, were sometimes barren, and gleamed through the blue tinge of air, and sometimes frowned with forests of gloomy pine, that swept downward to their base. These tremendous precipices were contrasted by the soft green of the pastures and woods that hung upon their skirts; among whose flocks, and herds, and simple cottages, the eye, after having scaled the cliffs above, delighted to repose. To the north, and to the east, the plains of Guienne and Languedoc
Web Book Dev Stack

HTML
CSS
(Javascript)
MySQL
PHP
schema.org
RDFa
Disruption?

New Roles for Publisher
“But think of the S.E.O. if the title actually named the two cities.”
Old Roles

Validating
Editing
Typesetting
Promotion
Sales
New Roles

Archiving
Metadata [structured]
Discovery
Analytics + Metrics
Sharing + Reuse
Structured Data

Data Model + Machine Readability
Schema.org
controlled vocabulary
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Discovery

RDFa

JSON-LD

Linked Data Topics
Gingerbread - Jonathan Bergh

45 mins

Table of Contents > Recipe and Essay Gingerbread. Ingredients: 1/2 c. soft shortening; 2 1/4 c. flour; 2 T. sugar; 1 tsp. soda; 1 egg; 1/2 tsp. salt; 1 c. dark New...

Property | Value
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**dbpedia-owl:abstract** | The Lord of the Rings is an epic high fantasy novel written by English author J. R. R. Tolkien. The story began as a sequel to Tolkien's 1937 children's fantasy novel The Hobbit, but eventually developed into a much larger work. It was written in stages between 1937 and 1949, much of it during World War II. It is the second best-selling novel ever written, with over 150 million copies sold. The title of the novel refers to the story's main antagonist, the Dark Lord Sauron, who had in an earlier age created the One Ring to rule the other Rings of Power as the ultimate weapon in his campaign to conquer and rule all of Middle-earth. From quiet beginnings in the Shire, a hobbit land not unlike the English countryside, the story ranges across northwest Middle-earth, following the course of the War of the Ring through the eyes of its characters, the hobbits Frodo Baggins, Samwise "Sam" Gamgee, Merry Brandybuck and Peregrin "Pippin" Took, but also the hobbits' chief allies and travelling companions: the elf Aragorn, a Ranger of the North and Boromir, a Captain of Gondor; Gimli, a Dwarf warrior; Legolas, an Elven prince; and Gandalf, a Wizard. The work was initially intended by Tolkien to be one volume of a two-volume set, the other to be The Silmarillion, but this idea was dismissed by his publisher. For economic reasons The Lord of the Rings was published in three volumes over the course of a year from 29 July 1954 to 20 October 1955. The three volumes were titled The Fellowship of the Ring, The Two Towers, and The Return of the King. Structurally, the novel is divided internally into six books, two per volume, with several appendices and background material included at the end of the third volume. Some editions combine the entire work into a single volume. The Lord of the Rings has since been reprinted numerous times and translated into many languages. Tolkien's work has been the subject of extensive analysis of its themes and origins. Although a major work in itself, the story was only the last movement of a larger epic Tolkien had worked on since 1917, in a process he described as mythopoeia [creation needed] influences on this earlier work, and on the story of The Lord of the Rings, includes philology, mythology, religion and the author's dastate for the effects of industrialization, as well as earlier fantasy works and Tolkien's experiences in World War I. The Lord of the Rings in its turn is considered to have had a great effect on modern fantasy. The impact of Tolkien's works is such that the use of the works' "Tolkienian" and "Tolkienesque" have been recorded in the Oxford English Dictionary. The enduring popularity of The Lord of the Rings has led to numerous references in popular culture, the founding of many societies by fans of Tolkien's works, and the publication of many books about Tolkien and his works. The Lord of the Rings has inspired, and continues to inspire, artwork, music, film and television, video games, and subsequent literature. Award-winning adaptations of The Lord of the Rings have been made for radio, theatre, and film.

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**dbprop:imageCaption** | The original cover designs for each volume as illustrated by Tolkien. They were later used for the 50th anniversary edition covers

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"artistBody": "The sand softens shifts ..."
Analytics + Metrics

Web Analytics, UX
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Katufuhlwurst (German Potato Sausage)

**Ingredients:**
- 16 lbs. potatoes, peeled and diced
- 5 lbs. onions, peeled and chopped
- 4 lbs. ground beef
- 2 lbs. ground pork
- Pepper, Salt, Garlic Powder and Italian seasoning to taste
- 15 pig casings
- 3 cans beer

**Directions:**
- Using an electric grinder or hand crank, grind potatoes and onions.
- Combine with beef, pork, seasonings, and beer.
- Stuff mixture into casings and use a sewing needle to poke holes into the sides to prevent air bubbles.
- When stuffed tightly, tie off and place onto an oiled sheet pan.
- Poke sausages again, and bake 350 degrees for one 1-1/2 hours.
- If you have leftover mixture, press into oiled casserole dishes, and bake 350 degrees for one hour or until golden brown.
- After consulting a native German friend, I discovered the correct spelling of this dish is probably Kartoffeln und Wurst.
Sharing + Reuse

Web Services + API
Social Sharing
Deep Linking
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    &lt;li&gt;Quickly fold in flour mixutre.&lt;/li&gt;
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- % New Sessions: 69.23%  
- New Users: 36 (87.80%)  

2. Facebook  
- Sessions: 8 (13.33%)  
- % New Sessions: 62.50%  
- New Users: 5 (12.20%)
Deep-linking the book

HTTP + URL
Ongoing Research

Data Modeling and Transformation
Genres - textbook, journal
UX of Reading
Real-time Analytics
Annotations
data=... options in almost every function we use from here forward. Figure 1-4 contains the side-by-side boxplots showing right skew for all the groups, slightly higher median and more variability for the Unattractive group along with some potential outliers indicated in two of the three groups.

> boxplot(Years~Attr, data=MockJury)

![boxplot](image)

**Figure 1-4:** side-by-side boxplot of Years based on picture groups.

The "~" (the tilde symbol, which you can find in the upper left corner of your keyboard) notation will be used every time a combination is selected.
Ready to pilot "estimated read time" facet in @msulibrary "book in browser" software. repo: github.com/msulibrary/bib...

cabin in the woods, seeking immortality. The boy was small and preternaturally ugly. He received his looks from a woodsman of sorts who engraved likenesses in tree rings. Their cabin was isolated, so the only likenesses he could see were their own. You could find their ugly mugs inscribed on every tree within a 20-mile radius of their humble...
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http://arc.lib.montana.edu/book/

Designed for the bot’s experience
Designed for the reader’s experience
Survey of the Field

HTMLBook
https://github.com/oreillymedia/HTMLBook

Leanpub
https://leanpub.com/

GitBook
https://www.gitbook.com/

Penflip
https://www.penflip.com/

gitenberg
https://gitenberg.github.io/

Book in Browser Conference
http://booksinbrowsers.org/

Library Publishing Coalition
http://www.librarypublishing.org/
Patrick O’Brien: Semantic Web Research Director at Montana State University Library.

Scott Young: Digital Initiatives Librarian at Montana State University.

Jason Clark: Head of Library Informatics and Computing at Montana State University Library

Kenning Arlitsch: Dean of the Library at Montana State University. His book, co-authored with Patrick O'Brien, is titled *Improving the Visibility and Use of Digital Repositories through SEO*, and was published in February 2013.
Thanks!

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